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ABSTRACT

Although scholars and policy analysts both value quality-controlled collections of research results, they evaluate research according to different criteria. Nevertheless, an examination of a pessimistic fictional research experience and a more productive actual experience indicate that, although differences in focus between scholars and policy analysts may make the interaction of research collections and policy analysis difficult, a productive match is possible through emphasizing the strengths of each. To facilitate this effective interaction, policy analysts must appreciate the need for theoretical context and recognize that it often will be communicated in terms of specific empirical results not useful in themselves; scholars and other data collectors must develop indexing and research facilities capable of handling diverse questions framed in different ways and of allowing users to browse in the collection; rapid retrieval of detailed information must be facilitated; and policy analysts must provide feedback to the scholars and collectors responsible for the research collections. Specific implications for REDUC (Red de Documentacion en Educacion para America Latina y el Caribe) are that system development should recognize differences between the system's contributors and users, that considerable effort should go toward developing a thoughtful user base, and that administrative and advisory mechanisms should maximize informal communication between the producers and users of educational research. (KM)

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Educational Research and Decision Making:

The Special Case of Research Collections and Policy Analysis[1]

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> "...I cannot guarantee that I carry all the facts in my mind. Intense mental concentration has a curious way of blotting out what has passed. The barrister who has his case at his fingers' ends and is able to argue with an expert upon his own subject finds that a week or two of the courts will drive it all out of his head once more. So each of my cases displaces the last..."
>
> -Sherlock Holmes, in The Hound of the Baskervilles

Faced with this problem, aficionados of Conan Doyle will recall, Mr. Holmes maintained an elaborate set of notebooks and file boxes, in which he recorded all potentially useful facts about crime, criminals, and potential crimes that appeared in London newspapers. On many occasions, Dr. Watson reports, criminals found themselves in custody because Holmes was able to recover and use important facts from his files as needed -- facts that others, including Scotland Yard, found important only in retrospect.

The essential features of Holmes's files were that collection according to specified rules preceded use, and that a carefully designed

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[1]These remarks were prepared for a conference on REDUC (Red de Documentación en Educación para America Latina y el Caribe) held at the Organization of American States in Washington D.C., U.S.A., on October 16 and 17, 1986.

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index permitted access tailored to the problem at hand. These same features define REDUC and similar collections of educational research intended, in part, to inform policy decision making. But such collections differ from Holmes's in one key respect: whereas Holmes both collected and used his data, scholars (or others following scholars' procedures) place material into research collections for policy analysts and other decision makers to use.

Scholars base current research on earlier conceptual and empirical work. To facilitate this they develop systems for publishing, archiving, abstracting, indexing, locating, and retrieving earlier work. In the interest of parsimony such systems retain good work and discard the rest, and therefore require rules for evaluating research and maintaining quality. Such rules figure prominently, albeit implicitly, in mechanisms for creating collections of research results.

Policy analysts, meanwhile, increasingly use tools capable of incorporating research results into planning, particularly in education and other social domains. Such tools prove particularly useful when relevant, useful research results are readily available -- when, for example, an existing collection of research results meets these quality-control criteria. It follows that both scholars and policy analysts value quality-controlled collections of research results.

If scholars provide policy analysts with collections of research, and both groups value quality, it seems to follow that planning and decision making will improve. This rarely proves true, I will argue, largely because scholars and policy analysts evaluate the quality of

information differently. Therefore, scholars do not produce the collections policy analysts need, and policy analysts expect research collections scholars generally will not produce. Let me illustrate the argument -- I am instructed to be brief, which precludes full proof -- with a fictional, general, and somewhat pessimistic example, then recount a related and more productive experience in the United States (both dealing with enrollment policies in higher education), and finally try to identify some principles for an effective integration of scholarly and policy interests in research collections. Without such integration, I submit, there can be little productive interaction between educational research and decision making.

It Can't Work...

Scholars review research according to principles established within various methodological and disciplinary domains. A quantitative sociologist, for example, might well evaluate studies of college enrollment according to their representation of relevant sociological theory -- on status attainment, say, which includes educational attainment -- and according to their use of statistical techniques such as regression analysis. Studies which score well according to both criteria "pass", and constitute journals, indexes, ERIC, and so forth; studies deficient in either or both "fail", perhaps to be revised and "passed" later. It is most important, from the scholar's perspective, that a study be done and set "right"; otherwise the rules of scholarly discourse place it beneath notice.

Thus have there developed two major bodies of work on postsecondary educational choice. One draws on sociological theory and data to argue that social class and social context contribute mightily to early academic achievement, which joins its precursors to influence postsecondary choice. The other body of work draws on economic investment and consumption models to argue that social class, social context, and academic experiences jointly produce various tastes for education in individuals, and that to decide whether to enter university prospective students weigh the economic and other returns education brings, including the satisfaction of tastes, against its costs and the relative costs and benefits of other choices[2]. The relevant studies in both domains tend to rely on longitudinal surveys of student backgrounds and choices, using various statistical techniques for evaluating different variables' effects and interactions, or on detailed case studies of individual choices. These bodies of work are well documented in standard collections of sociological, economic, and educational research.

Now, to move from scholarship to policy analysis, consider a Minister of Education committed to increasing the number of citizens

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[2]For reviews of these literatures as they bear on the United States, see G. Jackson, "Public efficiency and private choice in higher education", Educational Evaluation and Policy Analysis 4 (1982) 237-47, or D. Terkla and G. Jackson, "The state of the art in student choice research" (1984), soon to be available (a chronic problem) as an ERIC document. A classic exemplar of the sociological approach is to be found in W. Sewell, R. Hauser, and D. Featherman, Schooling and achievement in American society (New York: Academic Press, 1976), and of the economic approach in C. Manski and D. Wise, College choice in America (Cambridge MA: Harvard, 1983). The most recent work is my "Workable, comprehensive models of college choice", a 1986 report to the U.S. Department of Education not readily available except directly from me.

with bachelor's degrees, perhaps in economically important fields such as science, engineering, and agriculture. She wants to know how university students differ from other individuals of like age, and particularly how the Government can modify those differences and thereby (she hopes) increase enrollments. Is access the problem, in which case creating new institutions in underserved areas might help? Or should the Government work to reduce financial barriers at existing institutions? What about curriculum reform, faculty salaries, and athletic facilities?

An advisory panel of sociologists, using its established research data base, informs the Minister that an array of variables -- social-class background, academic experience in high school, and the availability of nearby colleges or universities, in particular -- work together to affect enrollment decisions; they provide her with abstracts of well-respected articles demonstrating just this in several different contexts. The Government Statistical Bureau, relying on its various data archives, provides tables of university-age individuals by social class, distributions of high-school grades, and maps of population and university locations.

Everything appears to be working just fine. The data look impressive, and rich conceptual descriptions of educational choice abound; much of this has come from established research collections, some of

them spanning national boundaries[3]. After some thought, however, the Minister finds herself dissatisfied. She must choose among possible policies and justify her recommendations in terms of relative cost and benefit, but neither the sociologists nor the statisticians will make comparative projections: the sociologists require individual data on interactions among variables to use their statistical models properly, while the Statistical Bureau offers only aggregate data and avers that its job is to document, not to guess. Consulting economists yields the Minister different articles and concepts, but the same unsatisfactory result.

Ultimately the Minister asks her staff and consultants to assemble useful data, however informal and ad hoc, so that she can make her decision and justify it. They do this through anecdotes, calls to administrators involved with student choice, and some organized guesswork. The Government's policy analysis draws only marginally on the

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[3]It bears noting in this company that ERIC identifies a sociological counterargument based on Chilean data, where Ernesto Schiefelbein and Joseph Farrell have found that educational variables may influence social attainment more than family variables, and that educational quality is more important than educational attainment. J.P. Farrell and E. Schiefelbein, "Education and status attainment in Chile: A comparative challenge to the Wisconsin model of status attainment", Comparative Education Review 29 (1985) 490-506; E. Schiefelbein and J.P. Farrell, "Educational and occupational attainment in Chile: The effects of educational quality, attainment, and achievement", American Journal of Education 92 (1984) 125-62; E. Shiefelbein and J.P. Farrell, Eight years of their lives: Through schooling to the labor market in Chile (Ottawa: International Development Research Centre, 1982). The authors attribute the difference between Chile and the United States to the less stable socioeconomic structure in Chile, and the Minister might well want to consider her own country's situation as she proceeds. Identifying such cross-cultural variation is a major service research collections can provide.

carefully collected wisdom of scholars in relevant disciplines, and extensively (but untraceably) on the assumptions, insights, and prejudices of numerous civil servants. The problem is that scholars' emphasis on design and focus meshes poorly with policy analysts' need for breadth and timeliness.

Neither side is behaving unreasonably here; each seeks data which meet its criteria for quality. For scholars these involve theory and method, and lead to an emphasis on longitudinal or intensive research. But longitudinal research is almost by definition not timely, while intensive individual research, however insightful, is difficult to generalize to larger populations with any statistical accuracy. For policy analysts the criteria for useful research are timeliness, comprehensiveness, accessibility, and extrapolability. Studies which meet these criteria often gloss over important theoretical distinctions, blur individual or subpopulation differences, and draw inferences about individual-level phenomena from aggregate data. However reasonably the sides behave, in view of these incompatibilities they probably will not collaborate effectively through a research collection. If my example represents reality, the prospects for ERIC, REDUC, policy-analysis journals, and similar services which seek to serve both audiences appear bleak, and educational research will have little influence on decision making[4].

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[4]This approximates the conclusion Jean-Pierre Vielle reached in his study of educational research and policy in Mexico, J.P. Vielle, "La capacidad y el impacto de la investigación educativa" (Mexico: Programa Nacional Indicativo de Investigación Instructiva, Reuniones de Informa-

...But It Can...

Let me move quickly to a true story about higher-education policy analysis in the United States, one which augurs better for the role of research collection in policy analysis. During the mid-1970s the United States Congress expanded federal financial-aid programs for post-secondary students and institutions, including scholarships, loans, various forms of loan guarantees, support for specific institutional activities, and in a few cases general institutional support. Combined with growth in the number of potential students, this produced sharp increases in federal expenditures on higher education. These expenditures clearly were headed for unsustainable levels, so budget cuts were inevitable.

Since many of the federal financial-aid programs involved entitlements or guarantees it was difficult to estimate the savings various cuts might entail or to compare these in light of their political costs. David Mundel, once a colleague of mine at Harvard but then working at the U.S. Congressional Budget Office, was asked to develop a simulation model capable of estimating the effects of likely changes -- such as needs tests, institutional exclusions, award limits, debt limits, or emphasis on certain majors -- on enrollment patterns by region, on

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ción Educativa, 1979, mimeo) -- a conclusion strongly disputed by Carlos Muñoz Iglesias in an editorial, Revista Latinoamericana de Estudios Educativos 10 (1980) v-xiv. Vielle and Muñoz were arguing about the relative merits of scholarly and action research, but the same issues speak to the relationship between research collections and policy analysts.

overall program expenditures, and on the distribution of program benefits by region, socioeconomic and minority groupings, and so forth.

Mundel began by consulting "the literature" -- not, as it happens, through ERIC, but through an essentially equivalent search involving other indexes and bibliographies. His conclusion essentially matched the Minister's in the fictional example above: existing research was "good", in the scholarly sense, but provided too inconclusive a base for his assignment. Theories were, Mundel observed, more detailed and less inclusive than he required, and most statistical models were too specialized to be usable with existing demographic and distributional data. Controlling his instinct to abandon the scholarly approach and start from scratch[5], he tried to extract specific effect estimates from the diverse studies. Matters looked up. On several points, such as the response of prospective students to price and financial aid and the effects of college or university proximity, he discovered great consistency across studies, particularly after adjustment for methodological differences. Moreover, the broad features of the postsecondary-choice process varied little from study to study, even though some studies ignored effects others found important. Gradually Mundel developed an outline of the choice process and a general sense of variables' relative impacts.

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[5]Mundel was, as it happens, co-author of a seminal work on college choice: M. Kohn, C. Manski, and D. Mundel, "An empirical investigation of factors which influence college-going behavior", Annals of Economic and Social Measurement 5 (1974) 391-419. This may explain his persistence.

Search-based model in hand, Mundel built a statistical model, bringing in available demographic data and specific estimates where possible, making reasonable assumptions in other cases, and repeatedly testing the sensitivity of his model's predictions to changes in assumptions. Before long he had developed an ad hoc model responding to the Congress's needs, and could assert safely that it represented both current scholarly research and the specific policy interests which motivated it. Mundel's model eventually evolved into one used by the Department of Education, where it continues to influence policy; its longevity stems, in part, from a relatively sound theoretical base.

If this story generalizes then the outlook for scholarly, policy-relevant archives like ERIC and REDUC is less bleak than it seemed in the preceding section. However, positive results seem to require a strong, thoughtful, judgmental, integrative user willing to evaluate and extend the product of research collections. In other words, whether a research collection is useful depends as much on the user as it does on the collection. This suggests a broadened emphasis on users among those seeking to advance research collections as policy-analysis tools, an emphasis generally absent in ERIC but, if this meeting is any guide, increasingly present in REDUC. Let me conclude with some comments on the appropriate relationship between users and research collections.

...if Everyone Knows What to Expect...

Thus far I have concentrated on fictional and concrete stories illustrating the difficult interaction between policy analysis and research collections and pointing to the requirements for successful connection. Let me rehearse the three key points that emerge.

Scholars and policy analysts evaluate research according to different criteria.

Scholars determine whether given pieces of research meet accepted standards for theoretical foundation and research method in the appropriate discipline, attending to (and "keeping", in the archival sense) studies that do and ignoring those that do not. Ambiguity arises around paradigmatic changes within disciplines, and around disciplinary differences. Policy analysts, on the other hand, assess the relevance of research to their assignment (policy analysts virtually always are working on a legislative or executive assignment), its adequacy as a basis for projection (policy analysis very often involves projection), and its timeliness, often finding that only ad hoc research will do.

Neither policy analysts nor scholars like to compromise their notion of quality; each expects the other side to adjust.

This stems not from childishness, but from each side's reasonable desire to do its job before it does someone else's. Incentives lie at the heart of the difficulty: policy analysts are rewarded for producing the required analysis, not for synthesizing scholarly works; scholars are rewarded for being scholarly, not for modifying disciplinary

conventions to meet someone else's needs. Exceptions appear only when individuals in either camp derive satisfaction from working effectively in the other: when policy analysts become interested in the theoretical context for their work, and in the accretion of knowledge over time, or when scholars become interested in the practical implications of their work for improving practice.

> A productive match between research collections and policy analysis involves emphasizing the strengths of each: drawing broad, theoretically sound models and rough estimates from collections, and relying on ad hoc research to translate these into useful answers.

Expecting scholarly research by itself to provide full, timely answers to practical questions or ad hoc policy analysis by itself to find robust theoretical ground is futile, but each is unexcelled on its own turf. Integrating the two domains, however, is the exclusive province of policy analysis, since the policy relevance of research cannot be discerned or evaluated until a question appears. This has implications for the necessary attributes of users and for search facilities, to which I now turn.

...and Is Properly Equipped.

I recounted David Mundel's experience above because it illustrates clearly what is necessary for research collections to function effectively and to improve policy analysis.

First, the policy analyst must appreciate the need for theoretical context, and recognize that this theoretical context often will be

communicated in terms of specific empirical results not themselves useful.

Second, scholars and other data collectors must recognize their limited ability to foresee what questions will be asked of their data. They must develop indexing and search facilities capable of handling diverse questions framed in different ways, and of allowing interested users to "muck around" in the collection. (In open-stack libraries, readers may recall, this involves using the catalog to find the right floor and shelf, and then seeing what else is shelved nearby; research collections, particularly computerized ones, rarely provide analogous forms of access.)

Third, it must be possible to retrieve detailed information from collections rapidly; one- or two-week intervals between computer searches for relevant database entries and the arrival of detailed hard copies, typical for educational-research collections, often exceed political tolerance.

Fourth, and perhaps most important in the long run, policy analysts who manage to use research collections to good effect must provide feedback to the scholars and collectors responsible; this can provide not only guidance, but also the incentive otherwise lacking for scholarly work to serve policy needs.

REDUC

If this argument contains morals for REDUC they are that system development should recognize differences between the system's contributors and users, that considerable effort should go to develop thoughtful users of its contents, and that administrative and advisory mechanisms should maximize informal communication between the producers and users of educational research. To be avoided are designs which reduce system responsiveness, which presume that decision makers will change their behavior to match REDUC's, or which evaluate quality according to either scholars' or policy analysts' criteria alone.

There is little question educational research can inform and improve decision making. But there is little reason, given the political and social importance of educational decisions, to expect research -- and particularly research collections such as REDUC -- to have overwhelming or immediate effects. Expecting too much, under these circumstances, entails receiving discouragingly little; hoping and designing for the best -- but not expecting it! -- may well yield success.

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